

PATENT COOPERATION TREATY

From the:
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

PCT

WRITTEN OPINION

(PCT Rule 66)

To: Rodyk & Davidson 9 Raffles Place #55-01 Republic Plaza SINGAPORE 048619		Date of mailing <i>(day/month/year)</i> 25 September 2000	
Applicant's or agent's file reference LAM/99058235		REPLY DUE within TWO MONTHS from the above date of mailing	
International application No. PCT/SG00/00012	International filing date <i>(day/month/year)</i> 31 January 2000	Priority Date <i>(day/month/year)</i> 2 February 1999	
International Patent Classification (IPC) or both national classification and IPC Int. Cl. ⁷ B22D 41/015, 41/62			
Applicant SINGAPORE POLYTECHNIC et al			

1. This written opinion is the first drawn by this International Preliminary Examining Authority. 2. This opinion contains indications relating to the following items:		<table style="width: 100%;"> <tr> <td style="width: 5%;">I</td> <td style="width: 10%; text-align: center;"><input checked="" type="checkbox"/></td> <td>Basis of the opinion</td> </tr> <tr> <td>II</td> <td style="text-align: center;"><input type="checkbox"/></td> <td>Priority</td> </tr> <tr> <td>III</td> <td style="text-align: center;"><input type="checkbox"/></td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td>IV</td> <td style="text-align: center;"><input type="checkbox"/></td> <td>Lack of unity of invention</td> </tr> <tr> <td>V</td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td>VI</td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Certain documents cited</td> </tr> <tr> <td>VII</td> <td style="text-align: center;"><input type="checkbox"/></td> <td>Certain defects in the international application</td> </tr> <tr> <td>VIII</td> <td style="text-align: center;"><input type="checkbox"/></td> <td>Certain observations on the international application</td> </tr> </table>	I	<input checked="" type="checkbox"/>	Basis of the opinion	II	<input type="checkbox"/>	Priority	III	<input type="checkbox"/>	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	IV	<input type="checkbox"/>	Lack of unity of invention	V	<input checked="" type="checkbox"/>	Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	VI	<input checked="" type="checkbox"/>	Certain documents cited	VII	<input type="checkbox"/>	Certain defects in the international application	VIII	<input type="checkbox"/>	Certain observations on the international application
I	<input checked="" type="checkbox"/>	Basis of the opinion																								
II	<input type="checkbox"/>	Priority																								
III	<input type="checkbox"/>	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability																								
IV	<input type="checkbox"/>	Lack of unity of invention																								
V	<input checked="" type="checkbox"/>	Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement																								
VI	<input checked="" type="checkbox"/>	Certain documents cited																								
VII	<input type="checkbox"/>	Certain defects in the international application																								
VIII	<input type="checkbox"/>	Certain observations on the international application																								
3. The applicant is hereby invited to reply to this opinion.																										
When?	See the time limit indicated above. The applicant may, before the expiration of that time limit, request this Authority to grant an extension, see Rule 66.2(d).																									
How?	By submitting a written reply, accompanied, where appropriate, by amendments, according to Rule 66.3. For the form and the language of the amendments, see Rules 66.8 and 66.9.																									
Also	For an additional opportunity to submit amendments, see Rule 66.4. For the examiner's obligation to consider amendments and/or arguments, see Rule 66.4bis. For an informal communication with the examiner, see Rule 66.6.																									
If no reply is filed, the international preliminary examination report will be established on the basis of this opinion.																										
4. The final date by which the international preliminary examination report must be established according to Rule 69.2 is: 2 June 2001																										

Name and mailing address of the IPEA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaustalia.gov.au Facsimile No. (02) 6285 3929	Authorized Officer R.P. ALLEN Telephone No. (02) 6283 2134
--	--

I. Basis of the opinion**1. With regard to the elements of the international application:***

- ☒ the international application as originally filed.
- ☐ the description, pages , as originally filed,
 pages , filed with the demand,
 pages , received on with the letter of
- ☐ the claims, pages , as originally filed,
 pages , as amended under Article 19,
 pages , filed with the demand,
 pages , received on with the letter of
- ☐ the drawings, pages , as originally filed,
 pages , filed with the demand,
 pages , received on with the letter of
- ☐ the sequence listing part of the description:
 pages , as originally filed
 pages , filed with the demand
 pages , received on with the letter of

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the written opinion was drawn on the basis of the sequence listing:

- ☐ contained in the international application in printed form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/fig.

5. ☐ This opinion has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed"

V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims 9 & 28	YES
	Claims 1-8, 10-27 & 29-31	NO
Inventive step (IS)	Claims 9 & 28	YES
	Claims 1-8, 10-27 & 29-31	NO
Industrial applicability (IA)	Claims 1-31	YES
	Claims	NO

2. Citations and explanations

Citations

- (a) Patent Abstract of Japan, JP 63-144855 A (NIPPON KOKAN KK) 17 June 1988 & JP 63-144855 A
- (b) EP 18450 A1 (IWATANI SANGYO KK) 12 November 1980
- (c) GB 1035875 A (INTERNATIONAL BUSINESS MACHINES CORPORATION) 13 July 1966
- (d) US 5846287 A (KUMAR et al.) 8 December 1998
- (e) US 4670884 A (LETIZIA et al.) 2 June 1987
- (f) US 3683094 A (SCHLIENGER) 8 August 1972
- (g) US 4700769 A (OHARA et al.) 20 October 1987
- (h) Derwent Abstract Accession No. 18928W/11, Class M24, RU 429099 A, (CHELYABINSK METALLURG WK) 15 October 1974
- (i) US 4110546 A (STENKVIST) 29 August 1978
- (j) US 5168917 A (OKUDA et al.) 8 December 1992
- (k) Patent Abstract of Japan, JP 56-151162 A (NAKASEKO ISAO) 24 November 1981
- (l) US 4572673 A (PORTER et al.) 25 February 1986

Novelty & Inventive Step

Claims 1-2 & 14 Citations (a)-(k) disclose all of the features of these claims.

Claims 3 & 15 Citations (a) & (c)-(i) disclose all of the features of these claims.

Claims 4 & 16 Citations (c) & (e)-(i) disclose all of the features of these claims.

Claim 5 Citations (c), (e)-(h) & (k) disclose all of the features of this claim.

Claim 6 Citations (a) & (d) disclose all of the features of this claim.

Claims 6-7 & 18 Citations (c), (f), (g) & (i) when combined with citation (l), which would be obvious to a person skilled in the art, disclose all of the features of these claims.

Claims 7-8 & 19 Citation (a) discloses all of the features of this claim.

Claims 9 & 28 None of the citations, or obvious combination thereof, disclose all of the features of any of these claims.

Claims 10-12 & 20-22 Citations (b) & (j) disclose all of the features of these claims.

Claims 13, 23, 27 & 29-31 Citation (b) discloses all of the features of these claims.

Claim 17 Citations (c) & (e)-(h) disclose all of the features of this claim.

Claim 18 Citations (a) & (d)-(e) disclose all of the features of this claim.

Claims 24-25 Citations (c) & (j) disclose all of the features of these claims.

Claim 26 Citations (a), (c) & (k) disclose all of the features of this claim.

VI. Certain documents cited

1. Certain published documents (Rule 70.10)

Application No. Patent No.	Publication date (day/month/year)	Filing date (day/month/year)	Priority date (valid claim) (day/month/year)
US 5963579	5 October 1999	11 August 1998	11 August 1997
US 5956366	21 September 1999	26 February 1997	26 February 1997

2. Non-written disclosures (Rule 70.9)

Kind of non-written disclosure	Date of non-written disclosure (day/month/year)	Date of written disclosure referring to non-written disclosure (day/month/year)
--------------------------------	--	--